

REMARKS

Claims 104-167 are pending in the Application. Claim 104 has been amended and Claim 111 has been cancelled. The specification has been amended to update the priority claim. A marked-up copy reflecting these amendments is attached.

Applicants acknowledge with appreciation that the Examiner has indicated that Claims 116, 135, 148, 149 and 167 would be allowable if rewritten in independent form.

The Examiner has rejected Claims 104-115, 117-134, 136-147 and 150-166 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-6 of U.S. Patent No. 5,616,165 Glicksman et al.

However, Applicants respectfully point out to the Examiner that although the present Application and Glicksman et al. share a common inventor, Glicksman et al. is not commonly owned with the present application. Therefore, a nonstatutory double patenting rejection is not proper for the present Application.

The Examiner also rejected Claims 104-115, 117-134, 136-147 and 150-166 under 35 USC §102(e) as being anticipated by Glicksman et al. The Examiner makes the general statement that "Glicksman et al. makes their gold particles by the same method disclosed in the instant Application." However, Applicants respectfully submit that the Examiner has not met the burden required under §102 with respect to each and every pending claim.

"A claim is anticipated only if each and every element set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F. 2d 628, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). It is respectfully submitted that the Examiner has not demonstrated where each element (i.e., each method step) is expressly or inherently disclosed by Glicksman et al.

Specifically, independent Claim 104 recites the step of generating an aerosol wherein the aerosol droplets have a size distribution wherein 80 weight percent of the droplets have a size of from about 1 μm to 5 μm . Glicksman et al. do not disclose or suggest the benefit of utilizing an aerosol having such a narrow droplet size distribution, nor a method for forming such an aerosol. Indeed, Glicksman et al. disclose that "the size of the droplets in the aerosol is not critical" in their invention. (Col. 3, lines 1-3)

Nonetheless, to advance prosecution of the present Application, Applicants have amended Claim 104 to incorporate the limitation of Claim 111, namely that the process includes the step of removing a portion of droplets from the aerosol that have an aerodynamic diameter greater than a preselected maximum diameter. This process step is neither disclosed or suggested by Glicksman et al. Therefore, it is respectfully submitted that Claim 104 and Claims 105-110 and 112-121, which depend on independent Claim 104, are not anticipated by Glicksman et al. and removal of this rejection is requested.

Independent Claim 122 is directed to a method for the production of composite metal particles by forming a liquid solution comprising a gold metal precursor and a non-metallic second phase precursor, generating an aerosol of droplets from the solution and heating the droplets to remove the liquid and form metal composite particles comprising gold metal and a non-metallic second phase. This method for the formation of gold-containing composite particles is neither disclosed nor suggested by Glicksman et al. Glicksman et al. is simply directed to the formation of pure gold metal particles and Glicksman et al. does not expressly describe a method for producing a composite particle including a non-metallic second phase. Therefore, it is respectfully submitted that Claim 122, and Claims 123-137 are not anticipated by Glicksman et al. and removal of this rejection is requested.

Independent Claim 138 is directed to a method for the production of metal alloy particles including forming a liquid solution of a gold metal precursor and a second metal precursor, generating an aerosol droplets from the solution, moving the droplets in the carrier gas and heating the droplets to form a metal alloy particles comprising gold and a second metal. Glicksman et al. does not disclose or suggest the formation of gold metal alloy particles, but rather is only directed to the formation of pure gold particles. Glicksman et al. does not disclose or suggest any method for making metal alloy particles. Therefore, it is respectfully submitted that independent Claim 138 and Claims 139-152 which depend on Claim 138 are not anticipated by Glicksman et al. and removal of this rejection is requested.

Independent Claim 153 discloses a method for the production of coated metal particles including the step of forming a liquid solution of a gold metal precursor, generating an aerosol, heating the aerosol droplets to remove liquid and form metal particles and then coating an outer surface of the gold metal particles. Such a method for forming coated

particles is neither disclosed nor suggested by Glicksman et al. No reference to coating of particles is made by Glicksman et al. Therefore, it is respectfully submitted that independent Claim 153 and Claims 154-167 which depend upon Claim 153 are not anticipated by Glicksman et al. and removal of this rejection is requested.

In the event that the Examiner maintains the foregoing rejections under 35 USC §102, Applicants respectfully request that the Examiner specifically point out the passages in Glicksman et al. that are relied upon to reject each claim.

The Examiner has also rejected Claims 104-167 under 35 USC §103(a) as being unpatentable over Glicksman et al. To establish *prima facie* obviousness, there must be some suggestion or motivation to modify the reference, there must be a reasonable expectation of success and the prior art reference must teach or suggest all claim limitations of the claimed invention. In re Vaack, 947 F.2d 488, 20 USPQ 1438 (Fed. Cir. 1991) and MPEP 2142.

As stated above, Glicksman et al. does not disclose or suggest each claim limitation of the methods that are recited in each of the pending Claims. Further, the Examiner has pointed to no line of reasoning as to why the method steps are obvious in view of Glicksman et al.


Specifically, the Examiner has provided no suggestion or motivation to modify the Glicksman et al. reference to include all of the limitations of the independent Claims. Independent Claim 104 has been amended to incorporate Claim 111 and recite that a portion of the droplets from the aerosol are removed wherein the droplets have an aerodynamic diameter greater than a preselected maximum diameter. Such as method step is not in any way suggested by Glicksman et al. Further, the remaining independent claims are directed to the formation of metal alloy particles, composite particles and coated particles. Such particle structures are neither disclosed nor remotely suggested by Glicksman et al. Further, the Examiner has given no line of reasoning why these steps are obvious in view of Glicksman et al. Therefore, the removal of this rejection is respectfully requested.

In view of the foregoing, applicants respectfully request reconsideration of the present application. A petition for a three-month extension of time along with the

appropriate fee accompanies this response. It is not believed that any additional fees are owed, however any such additional fees can be charged to deposit account No. 50-1419.

Respectfully submitted,

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REVISIONS SHOWING CHANGES MADE

IN THE SPECIFICATION:

At page 1, please delete the paragraph beginning at line 1 and replace it with the following:

This is a division of application Serial No. 09/028,901, filed on February 24, 1998, now abandoned, which claims priority to U.S. Provisional Application 60/038,258, filed on February 24, 1997 and U.S. Provisional Application 60/039,450 filed on February 24, 1997.

IN THE CLAIMS:

104. (Amended) A method for the production of gold metal particles, comprising the steps of:

a) generating an aerosol of droplets from a liquid wherein said liquid comprises a gold metal precursor [and wherein said droplets have a size distribution such that at least about 80 weight percent of said droplets have a size of from about 1 μm to about 5 μm];

b) moving said droplets in a carrier gas; [and]

c) removing a portion of droplets from said aerosol, wherein said removed droplets have an aerodynamic diameter greater than a preselected maximum diameter; and

d) heating said droplets to remove liquid therefrom and form gold metal particles comprising at least about 50 weight percent gold metal, wherein said droplets have a size distribution such that at least about 80 weight percent of said droplets have a size of from about 1 μm to about 5 μm .